

Device for dispensing tablet- or capsule-shaped medicaments in desired doses

The invention relates to a device for dispensing tablet- or capsule-shaped  
5 medicaments in desired doses, the device comprising a collar-shaped  
cassette body, including a central opening surrounded by an open-top  
annular space which is divided by partitions for dosage containers, and a  
cover, concealing the dosage containers, rotatable relative to the cassette  
body, and provided adjacent to its circular rim with a dispensing aperture  
10 which is coincidable with any dosage container by rotating the cover.

This type of dispenser for medicaments is prior known from the Applicant's  
patent application WO 02/17850. It is an object of this invention is a further  
development of such dosage dispensing cassette to enable its use more  
15 effectively than before also as a manually operated dosage dispensing  
device, which is independent of the automated dispenser and has its features  
further improved in terms of both dispensing doses from dosage containers  
and loading doses into the containers.

20 This object is achieved on the basis of the characterizing features set forth in  
the appended claim 1. The dependent claims disclose preferred structural  
solutions for the invention.

One exemplary embodiment of the invention will now be described with  
25 reference to the accompanying drawings, in which:

Fig. 1 shows a collar-shaped cassette body for a device of the invention  
in perspective views from above (bottom figure) and from below  
(top figure), and

Fig. 2 shows a cover for a device of the invention as seen from above (bottom figure) and from below (top figure).

5 Fig. 3 shows an example of a dispensing schedule, which is printed on a separate and replaceable substrate.

The device comprises a collar-shaped cassette body 1, including a central opening 2 surrounded by an open-top annular space which is divided by partitions 4 for dosage containers 3. In the illustrated case the number of  
10 dosage containers 3 is 28, corresponding to 2 x 7 days a week.

A cover 11 concealing the dosage containers 3 is adapted to be rotatable with respect to the cassette body 1. The cover 11 has its circular rim provided with a knurling 17, which provided a finger grip for making it easier  
15 to rotate the cover 11. In the proximity of the cover's 11 circular rim is provided a dispensing aperture 13, which is coincidable with any dosage container 3 by turning the cover 11.

The body 1 has the outer rim of its top edge provided with a circular hem 8  
20 and the cover has its rim provided with inwardly directed lugs 18, the circular hem 8 being provided, at a pitch complementary thereto, with discontinuities 9 which, in just one rotary position of the cover 11, establish passages for the lugs 18. When the cover 11 has been placed in position, in said rotary position, the lugs 18 are engageable behind the circular hem 8 by rotating  
25 the cover 11. Thus, the cover 11 will be retained in contact with the body 1 in all other rotary positions of the cover 11 except in the rotary position allowing a passage of the lugs 18. In the illustrated case, this rotary position allowing an attachment and detachment of the cover is selected in such a way that the cover's dispensing aperture 13 falls alongside a compartment  
30 10 present between the dosage containers 3. The compartment 10 has a closed top and an open bottom, and a space occupied thereby is equal to

that occupied by each dosage container 3, i.e. matching to the pitch of the dosage containers 3.

The cover 11 is provided with a recess 12 or a collar ring complementary to  
5 its annular wall 15, which is fit to be embedded in the body's 1 central  
opening 2 as the cover is set in position. The recess 12 is provided with a  
window 14, through which is visible a dispensing time for at least one dose,  
which is printed on a dispensing schedule 20 fitted in the body's central  
opening 2. Thus, the replaceable dispensing schedule 20 (Fig. 3) is insertable  
10 from below in the body's central opening 2 to make it bear against a collar  
flange 5 present at the top rim of the opening 2. Alongside the collar flange 5  
are provided protrusions 7 at an appropriate pitch, which enable holding the  
dispensing schedule in place. The body 1 has its central opening 2 provided  
with a groove 19 for receiving a bracket 21, which protrudes from the  
15 dispensing schedule's circumference and retains the dispensing schedule 20  
at a correct angle of rotation. The substrate, on which the discoidal  
dispensing schedule is printed, may consist of thin cardboard or plastics or  
paper, backed up by a clear plastic cover. Such a replaceable substrate can  
be printed, not only with a dispensing schedule, but also with names of  
20 medicaments for individual medication dosage. The exemplary case of fig. 3  
shows a dispensing schedule for a medicament to be administered 2 times a  
day.

The outer rim is divided with a colour code 22 complementary to a container  
25 pitch or to a multiple of the container pitch. A rim 23 is marked with days of  
the week. The same day of the week can be in coincidence with several  
successive containers. A rim 24 carries a numeral designation, which  
indicates which number of the daily doses is at hand.

30 The body's central opening 2 has its rim, in the present case the collar  
flange's 5 inner rim, provided with a knurling 6, having a pitch which is

matched to that of the dosage containers 3. The cover's recess 12 has its outer rim provided, or there are, in contact with the collar flange complementary to the wall 15 of the recess 12, pawls 16 set for cooperation with the knurling 6, which provide a retaining response against rotation of the cover once the cover's aperture 13 is in coincidence with a given dosage container 3. This facilitates positioning the aperture 13 in alignment with the dosage container 3 as the cover 11 is rotated. Reference was made above to a rotary position allowing a passage of the lugs 18. In this rotary position, which enables positioning and removal of the cover, the dispensing aperture 13 falls preferably alongside the closed compartment 10 in coincidence with the first dosage container 3.

If the cover's recess 12 is replaced by just a collar flange surrounding its wall 15, it is nevertheless preferred that the dispensing schedule be concealed over other sections except the one in line with the window 14 revealing a certain dosage area. In other words, the cover's 11 central area, except for the window 14, is essentially non-transparent, regardless whether the question is about the bottom of the recess 12 or the top part of the collar flange, which is flush with the rest of the cover surface. In the present case, a formation 14a in the middle of the window 14 indicates a dose to be dispensed and a schedule therefor. The window is sufficiently wide in either direction for also revealing one dose forward and one dose backward, i.e. the next dose and the dose already taken. The pawls 16 are shaped and designed to allow rotation of the cover in two directions and to make a resistance to rotation backward in the dispensing schedule more powerful than what is encountered when progressing forward in the dispensing schedule. In the illustrated case the pawls 16 consist of pliable tabs. Each tab includes adjoining faces which, depending on the rotating direction of the cover, have a different angle of incidence with ridges of the knurling 6, whereby, when the cover is rotated backward, the tabs 16 are forced to deflect (give way) faster than during a forward rotation of the cover. The

possibility of turning the cover also backward in the dispensing schedule serves in correcting the errors occurring in loading, without having to rotate the cover all the way around. As far as dispensing doses is concerned, the same applies also to accidentally skipping over a dose to be administered.

- 5 Since the resistance to rotation is lower forward in the dispensing schedule, the correct rotating direction is easy to detect on the basis of a rotating response alone.

- 10 The inventive device can be operated manually as such, both for facilitating the loading of medicaments into dosage containers and as an easy-to-use dosage dispenser. However, the same device is also adaptable to the automated system disclosed in the application WO 02/17850.